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ENUMERANTUR PLANTAE DAKOTAE SEPTENTRIONALIS VASCULARES.—XII.

ENUMERAVIT J. LUNELL.

The Vascular Plants of North Dakota.—XII.

With Notes by J. Lunell.

1084. **Aster paniculatus** Lam. Encycl. I: 306. (1783).

Devils Lake, Dunsieth, Pleasant Lake.

1085. **Aster paniculatus** var. **polychrous** Lunell, var. nov.

Leaves narrowly lanceolate, rays purplish of many different shades.

This form, grows on low prairie, while the species prefers protected situations. Leeds.

1086. **Aster lautus** Lunell in Am. Mid. Nat. Vol. II: 146. (1911).

Leeds.

1087. **Aster lautus** var. **prionoides** Lunell, var. nov.

Stem leaves serrulate (the species has entire leaves, and in many hundreds of plants examined I have noticed only a few with serrulate margins.) Leaflets of the inflorescence often less numerous and less reduced in size. Leeds.

1088. **Aster laetevirens** Greene, Pittonia IV: 219. (1900).

Leeds.

1089. **Aster clivorum** Lunell, sp. nov.

Caulis gracilis, 4-5 dm. altus, simplex. Folia ampla, amplissimorum 12x3.5 cm. mensura, apicem versus sensim diminuta, tenuia, acuminata, sessilia, denticulata. Inflorescentiam capitulorum paucorum non vidi, sumo autem negari non posse. Specimen typi capitulum habet solitarium quod propemodum sessile est, disco 1 cm. alto latoque. Involucri serierum trium laxi squamae marginibus albis apicibusque viridibus praeditae. Flores radiati caerulei.

Stem slender, 4-5 dm. high, simple, with minute leaves in three of the upper axils indicating future branching if an extension of the season would permit it. Leaves large, the maximum size being 12x3.5 cm., gradually diminished toward the top, thin, acuminate, sessile, denticulate. I accept as undeniable that the inflorencence has a few heads, though I have not seen them. The type specimen has a solitary head, which is almost sessile, with the disk 1 cm. high and wide. Involucre lax, with 3 rows of linear, white-margined, green-tipped bracts. Rays blue.

This species, with its leaves resembling an exuberant form of *A. paniculatus*, and its head in size and color suggestive of *A. salicifolius*, was collected by the writer in the foot-hills of the Turtle Mountains, near Dunsieth, Rolette County, September 3, 1911.

1090. **Aster Jacobaeus** Lunell, sp. nov.

Caulis gracilis, 4-8 dm. altus, simplicior vel apicem versus ramis paucis brevibus convergentibus, 1-8 cm. longis gaudens, striatus, paene glabratus, apice exepto lineis pilosis ferme obliteratis. Folia tenuia, firmiora, parva; acuminata, sessilia, caulina marginibus subtus integris, superne denticulatis vel integris, 2-7 cm. longa, 7-10 mm. lata, ramorum integra, 18mm. longa, 5 mm. lata. Inflorescentia anguste racemosa, 0.5- 3 dm. alta, capitulis infimis solitariis, in axillis foliorum vel sessilibus vel ramis brevibus sustentis, apicem vero versus capitulis 2-6 fere sessilibus vel breviter pedicellatis, unoquoque in axillo folioli sui solitario. Discus capituli 6-8 mm. altus latusque. Involucri serierum trium laxi squamae acutae, apicibus viridibus praeditae. Flores radiati albi vel pallide rubicundi, vel obscure—pallide violaceo-purpurei.

Stem slender, 4-8 dm. high, quite simple or with a few convergent short branches, 1-8 cm. long, toward the top, striate, almost glabrate, the hairy lines quite obliterated except at the upper end. Leaves thin but firm, rather small, acuminate, sessile, on the stem with the lower margin entire and the upper either denticulate or entire, 2-7 cm. long, 7-10 mm. wide, and on the branches 18 mm. long, 5 mm. wide, entire along the margins. Inflorescence narrowly racemose, 0.5-3 dm. high, with the lowest heads solitary, either sessile or on short branches in the leaf-axils, and toward the top on the branches 2-6 heads almost sessile or on short pedicels, each solitary in the axil of its leaflet. Disk of the head 6-8 mm. high and wide. Involucre lax, with three rows of linear, acutè, green-tipped bracts. Rays white or pale pink, or dark to pale violet purple.

Growing in the muddy soil of low meadows on the border of James River (hence the species name), near Jamestown, Stutsman County, where it was collected by the writer on August 24, 1913. Found in similar surface conditions at Leeds on Sept 3, 1916.

1091. **Aster durus** Lunell in Am. Mid. Nat. Vol. II: 148. (1911).

Leeds, Butte, Pleasant Lake.

1092. **Aster ptarmicoides** (Nees) T. & G. Fl. N. A. 2: 160. (1841).

Doellingeria ptarmicoides Nees, Gen. & Sp. Ast. 183. (1832)

Leeds, Butte, Minot.

1093. **Aster multiflorus** Ait. Hort. Kew 3: 203. (1789).

Leeds, Butte; Kulm (Brenckle).

1094. **Aster polycephalus** Rydb. Bull. Torr. Bot. Club. 33: 153. (1906).

Leeds.

1095. **Aster commutatus** (T. & G.) A. Gray, Syn. Fl. I: part 2. 125. (1841).

Aster multiflorus commutatus Torr. & Gray, Fl. N. A. A. 2: 125. (1841).

Leeds, Butte.

1096. **Aster exiguus** (Fernald) Rydb. Bull. Torr. Bot. Club. 28: 505. (1901).

Butte.

1097. **Aster crassulus** Rydb. Bull. Torr. Bot. Club. 28: 504. (1901).

Leeds, Butte; Fargo (Cl. Waldron).

1098. **Aster pauciflorus** Nutt. Gen. Pl. 2: 154. (1818).

"Margins of saline springs, near Fort Mandan on the Missouri;" Cherry Creek, Shafer, McKenzie County (O. A. Stevens).

BRACHYACTIS Ledeb. Fl. Ross. II: 495. (1846).

1099. **Brachyactis angustus** (T. & G.). Britt. Ill. A. III: 383. (1893).

Aster angustus T. & G. Fl. N. A. 2: 162. (1842).

Leeds, Butte.

MACHAERANTHERA Nees, Gen. & Sp. Ast. 224. (1832).

1100. **Machaeranthera canescens** (Nutt.) Gray, Pl. Wright I: 89. (1852).

Williston (W. B. Bell.)

TESSENIA Bubani, Nuov. Giorn. Bot. It. V: 318 (1873), also Fl. Pyr. 2: 263. (1900). Name in honor of Tessen, a chinese emperor who in 1200 A. C. had a splendid botanical garden. If Tessen the botanist deserved to be honored the name is just as good, as it would be bad if dedicated to the imperial Mecenas. Botanical work and research, not material gifts, should inspire a name.

Panios Adans. Fam. Pl. 2: 124 & 587, (1763), rejected by Bubani, as applied to various heterogeneous types

Erigeron auctorum, not Diosc., nor. Plin. =*Senecio vulgaris* of the ancients.

1101. **Tessenia aspera** (Nutt.) Lunell.

Erigeron asper Nutt. Gen. 2: 147. (1818).

Kulm (Brenckle). "Plains of the Missouri."

1102. **Tessenia aspera** var. **appressa** Lunell, comb. nov.

Erigeron asper var. *appressus* Lunell in Am. Midl. Nat. Vol. III: 3. (1913).

Dickinson (Cl. Waldron).

1103. **Tessenia aspera** var. **subintegra** Lunell, comb. nov.

Erigeron asper var. *subinteger* Lunell in Am. Midl. Nat. Vol. III: 143. (1913).

Kulm (Brenckle); Towner.

1104. **Tessenia abruptorum** Lunell, comb. nov.

Erigeron abruptorum Lunell in Am. Midl. Nat. Vol. III: 3. (1913).

Butte, Towner.

1105. **Tessenia multicolor** Lunell, comb. nov.

Erigeron multicolor Lunell, in Am. Midl. Nat. Vol. II: 255. (1912).

Leeds, Butte.

1106. **Tessenia oxyodonta** Lunell, nov. comb.

Erigeron oxyodontus Lunell, in Am. Midl. Nat. Vol. III: 3. (1913).

Butte.

1107. **Tessenia oligodenta** Lunell, nov. comb.

Erigeron oligodontus Lunell, in A. Midl. Nat. Vol. III: 4. (1913).

Butte.

1108. **Tessenia oligodonta** var. **acuminata** Lunell, nov. comb.

Erigeron oligodontus var. *acuminatus* Lunell, in Am. Midl. Nat. Vol. III: 4. (1913).

Butte.

1109. **Tessenia oligodonta** var. **roseata** Lunell, var. nov.

Rays of a vivid rose color. Leeds, Butte.

1110. **Tessenia procera** Lunell, nov. comb.

Erigeron procerus Lunell, in Am. Midl. Nat. Vol. III: 5. (1913). Butte.

1111. **Tessenia anodonta** Lunell, nov. comb.

Erigeron anodontus Lunell, in Am. Midl. Nat. Vol. III: 6. (1913).

Leeds, Butte.

1112. **Tessenia tarda** Lunell, nov. comb.

Erigeron tardus Lunell, in Am. Midl. Nat. Vol. III: 344. (1914). York.

1113. **Tessenia glabella** (Nutt.) Lunell, nov. comb.

Erigeron glabellus Nutt. Gen. Pl. II: 147. (1818).

"Plains of the Missouri (around Fort Mandan)." Leeds, Butte.

1114. **Tessenia glabella** var. **subdiscoidea** Lunell, var. nov. Rays almost absent. Leeds.

1115. **Tessenia pumila** (Nutt.) Lunell, nov. comb.

Erigeron pumilus Nutt. Gen. Pl. II: 147. (1818).

Towner, Minot; Turtle Lake (O. A. Stevens).

1116. **Tessenia philadelphica** (Linn.) Lunell, nov. comb.

Erigeron philadelphicus Linn. Sp. Pl. 863. (1753).

Leeds, Peninsula of Lake Ibsen, Turtle Mountains.

1117. **Tessenia philadelphica** var. **acaulescens** Lunell, var. nov.

Plant acaulescent up to the inflorescence, which commences 2-4 inches from the lower end of the stem. Dry bottom of Lake Ibsen.

1118. **Tessenia subcostata** Lunell, nov. comb.

Erigeron subcostatus Lunell, in Am. Mid Nat. Vol. III., 5. (1913).

Dickinson (Cl. Waldron).

1119. **Tessenia obscura** Lunell, nov. comb.

Erigeron obscurus Lunell, in Am. Mid. Nat., Vol. II: 256. (1912).

Leeds, Devils Lake.

1120. **Tessenia ramosa** (Walt.) Lunell, nov. comb.

Erigeron ramosus (Walt.) B. S. P. Prel. Cat. N. Y. 27. (1788)

Doronicum ramosum Walt. Fl. Car. 205. (1788).

Kulm (Brenckle.)

1121. **Tessenia racemosa** (Nutt.) Lunell, nov. comb.

Erigeron racemosus Nutt. Trans. Am. Phil. Soc. 7: 312. (1841).

Leeds, Devils Lake.

1122. **Tessenia racemosa** var. **simplicissima** Lunell, var. nov.

Stem at the end of the season 40 cm. long, very slender, simple, bearing 1-4 heads.

Turtle Mountains: St. John.

1123. **Tessenia racemosa** var. **arcuata** Lunell, var. nov.

Branching freely from the base; the branches arcuate. Dry bottom of Lake Ibsen.

LEPTILON Raf. Am. Month. Mag. 2: 268. (1818).

1124. **Leptilon canadense** (Linn). Britt. in Britt. & Br. Ill. Fl. 3: 391. (1898).

Erigeron canadensis Linn. Sp. Pl. 863. (1753).

Leeds, Butte; Kulm (Brenckle).

DOELLINGERIA Nees, Gen. & Sp. Ast. 176. (1832).

1125. **Doellingeria umbellata pubens** (A. Gray) Britt. in Britt. & Br. Ill. Fl. 3: 392. (1898).

Aster umbellatus var. *pubens* A. Gray, Syn. Fl. I^2: 197. (1884).

Turtle Mountains, Pleasant Lake.

ANTENNARIA Gaertn. Fruct. & Sem. 2: 410, pl. 167. (1791); R. Br., acc. to Bubani.

SEXUAL KEY.

Group I. Both staminate and pistillate flowers found. These grow either promiscue or in separate clumps, but in their own immediate proximity: *A angustiarum, A Lunellii, A microphylla.*

Group II. Both staminate and pistillate flowers found, but each kind is growing alone, in localities widely separated from the other: *A. chelonica.*

Group III. Only staminate flowers found: *A. microphylla solstitialis.*

Group IV. Only pistillate flowers found: *A. aprica, A. aureola, A. aureola roseata, A. oxyphylla.*

ANALYTICAL KEY.

I. Heads 8–12 mm. high.
  A. Mature leaves glabrous above.
    1) Fertile plants tall, sterile low. Stolons elongated.................*A. chelonica*
    2) Fertile and sterile plant of equal length. Stolons 1-2 as long as the stem.................*A. angustiarum*
  B. Leaves small, permanently hoary pubescent above, at least toward the margins.................*A. Lunellii*
  C. Leaves permanently tomentose on both sides.
    1) Low, with obtuse pistillate bracts.................*A. aprica*

2) Middle sized, with acute, white, gold tinted pistillate bracts……*A. aureola*
3) Middle-sized, with acute, rose-colored pistillate bracts *A. aureola roseata*
4) Tall, the outermost series of pistillate bracts broad, obtuse, the inner narrower, acute……*A. oxyphylla*

II. Heads 5–8 mm. high.
Leaves small, finely and appressedly silky tomentose.
1) Heads in an open corymb, pedunculated. Scarcity of staminate plants. Tall……*A. microphylla*
2) Heads in glomerate, capitate clusters. Absence of pistillate plants. Low……*A. microphylla* var. *solstitialis*

1126. **Antennaria chelonica** Lunell in Am. Mid. Nat. Vol. II: 126. (1911).

St. John.

1127. **Antennaria angustiarum** Lunell in Am. Mid. Nat. Vol. III: 141. (1913).

Butte.

1128. **Antennaria Lunellii** Greene in Am. Mid. Nat. Vol. II: 81. (1911).

Leeds.

1129. **Antennaria aprica** Greene, Pittonia 3: 282. (1898).

Leeds.

1130. **Antennaria aureola** Lunell in Am. Mid. Nat. Vol. II: 288. (1912).

Butte, Pleasant Lake, Towner, Dunsieth, Peninsula of Lake Ibsen, Minnewaukan.

1131. **Antennaria aureola** var. **roseata** Lunell.

Antennaria aprica var. *rosea* Lunell in Bull. Leeds Herb. No. 2, p. 8. (1908).

Towner.

1132. **Antennaria oxyphylla** Greene Pittonia 4: 284. (1901).

Dickinson (Bergman, Cl. Waldron).

1133. **Antennaria microphylla** Rydb. Bull. Torr. Bot. Club. 24: 303. (1897).

Leeds, Peninsula of Lake Ibsen, Devils Lake, Pleasant Lake, Turtle Mountains.

1134. **Antennaria microphylla** var. **solititialis** Lunell.

Antennaria solstitialis Lunell in Proc. Biol. Soc. Wash. Vol. XX: 39. (1907).

Leeds.

RESINOCAULON (Gr. *ρητὶνη* resin, *ηαυλὸς* stem) Lunell, gen. nov.

Silphium Diosc., Plin. = *Laserpitium*. Ruel. de Diosc. III: 264. (1547) under *Laserpitium* says: "Caulem aliqui silphion. vocavere." Plinius, Hist. (1532) page 349, line 5: "Ab his proximum dicetur auctoritate clarissimum laserpitium, quod Graeci silphion vocant, in Cyrenaica provincia repertum."—Bubani, Fl. Pyr. II: 398, line 23: "*Silphium* L. cuilibet curae commendamus." —*Silphium* Linn. Gen. (1737). Hort. Cliff. (1737).

Asteriscus Tour. Elém. 308. (1694), Dill. Hort. Elth. 42.. (1732), not *Asteriscon* Dod. Herb. 474. (1618). = *Aster atticus* Fuchs.

1135. **Resinocaulon perfoliatum** (Linn.) Lunell.

Silphium perfoliatum Linn. Sp. Pl. ed. 2., 1301. (1763).

Fargo (O. A. Stevens).

HELIOPSIS Pers. Syn. 2: 473. (1807).

1136. **Heliopsis scabra** Dunal, Mem. Mus. Paris, 5: 56, pl 4. (1819).

Devils Lake, Turtle Mountains, Leeds.

OBELISCOTHECA Vail. Act. 426. (1720). A name, not very beautiful, almost sesquipedalian!

Rudbeckia Linn. Gen. no. 980, antedated by Houston, Mss. who used it for *Conocarpus*.

1137. **Obeliscotheca flava** (Moore) Nwd. & Ll.

Rudbeckia flava Moore, in Greene Pittonia 4: 179. (1900).

Leeds, Butte, Pleasant Lake, Turtle Mountains.

1138. **Obeliscotheca flava perbracteata** (Lunell) Nwd. & Ll

Rudbeckia flava perbracteata Lunell in Am. Mid. Nat. Vol. II: 157. (1912).

Leeds, Butte.

1139. **Obeliscotheca ampla** (A. Nels.) Nwd. & Ll.

Rudbeckia ampla A. Nels. in Bull. Torr. Bot. Club 28: 234. (1901).

Turtle Mountains, Pleasant Lake.

RATIBIDA Raf. Am. Month. Mag. 2: 268. (1818).

1140. **Ratibida columnifera** (Nutt.) Woot. & Standl. Fl. New Mexico. 706. (1915.)

Rudbeckia columnifera Nutt. Fraser's Cat. 75. (1813).

Rudbeckia columnaris Pursh, Fl. Am. Sept. 575. (1814).

Leeds.

1141. **Ratibida columnifera pulcherrima** (DC.) Woot. & Standl l. c.

Obeliscaria pulcherrima DC. Prodr. 5: 559. (1836).

Leeds, Butte, Bottineau.

BRAUNERIA Necker, Elém. I: 17. (1790).

Echinacea Moench. Meth. 591. (1794).

1142. **Brauneria pallida** (Nutt.) Britt. Mem. Torr Bot. Club 5:333. (1894.)

Rudbeckia pallida Nutt. Journ. Acad. Phila: 7: 77. (1834).

Echinacea angustifolia DC. Prodr. 5: 554 (1836).

Narrows, Towner, Leeds.

HELIANTHUS Linn. Gen. n. 979.

ANALYTICAL KEY.

- I. Annuals. Disk dark.
  - A. Leaves dentate; bracts ovate or obovate, acuminate, hispid-ciliate .... *H. annuus*
  - A. Leaves entire, or almost so; bracts lanceolate, canescent *H. petiolaris*
- II. Perennials.
  - A. Disk dark brown or purple .... *H. subrhomboideus*
  - A. Disk yellow or light brown.
    - B. Leaves lanceolate, 3–8 times as long as wide, acuminate.
      - C. Leaves conduplicate.
        - D. Rays 15–30 .... *H. Maximiliani*
        - D. Besides these, a number of additional ray-like flowers emanates from the disk .... *H. Maximiliani* var. *iubaris* n. var
      - C. Leaves flat, subentire or denticulate .... *H. Nuttallii*
    - B. Leaves ovate, ovate-lanceolate or oblong, acute, short-petioled.
      - C. Leaves not verticillate.
        - D. Leaves ovate-lanceolate, 2.5—3 times longer than wide .... *H. apricus*
        - D. Leaves oblong-ovate, quite large, twice as long as wide.
          - E. Leaves smooth beneath .... *H. nitidus*
          - E. Leaves scabrous beneath .... *H nitidus* var. *camporum*
      - C. Leaves verticillate in threes .... *H. nitidus* var. *trifoliatus* n. var.
    - B. Leaves ovate, acuminate, large, long-petioled, serrate, 3.5—4 times longer than wide.
      - C. Leaves soft-pubescent beneath .... *H. tuberosus*
      - C. Leaves white-canescent beneath .... *H. tuberosus subcanescens*

1143. **Helianthus annuus** Linn. Sp. Pl. 904. (1753).

Leeds, Bismarck.

1144. **Helianthus petiolaris** Nutt. Journ. Acad. Phila. 2: 115. (1821).

Devils Lake, Pleasant Lake; Denbigh (Bergman).

1145. **Helianthus subrhomboideus** Rydb. Flora of Montana 419. (1900).

Leeds, Butte.

1146. **Helianthus Maximiliani** Schrad. Ind. Sem. Hort. Goett. (1835).

Leeds, Devils Lake, Turtle Mountains.

1147. **Helianthus Maximiliani** var. **iubaris** Lunell, var. nov. For description see Key. Leeds.

1148. **Helianthus Nuttallii** T. & G. Fl. N. A. 2: 324. (1842). Willow City, Towner.

1149. **Helianthus apricus** Lunell in Am. Mid. Nat. Vol. I: 237. (1910).

Leeds, Butte, Towner.

1150. **Helianthus nitidus** Lunell in Am. Mid. Nat. Vol. I: 236. (1910).

Butte.

1151. **Helianthus nitidus var. camporum** Lunell in Am. Mid. Nat. Vol. I: 237. (1910).

Leeds. The change proposed in Am. Mid. Nat. Vol. II: 127. (1911) is herewith retracted.

1152. **Helianthus nitidus** var. **trifoliatus** Lunell, var. nov. For description see Key. Butte.

1153. **Helianthus tuberosus** Linn. Sp. Pl. 905. (1753).

Peninsula of Lake Ibsen, Turtle Mountains.

1154. **Helianthus tuberosus subcanescens** A. Gray, Syn. Fl. I. Part 2: 280. (1884).

Pleasant Lake, Bismarck.

COREOPSIS Linn. Gen. n. 981; T. & G. Fl. II: 338 (1842).

1155. **Coreopsis tinctoria** Nutt. Journ. Acad. Phila. 2: 114. (1821).

Morton County (W. B. Bell).

BIDENS Caesalpinus, De Plantis Bk. 12, ch. 17. (1583); Tour. Inst. 462. (1700); Linn. Gen. n. 932.

1156. **Bidens glaucescens** Greene, Pittonia 4: 258. (1901)

Leeds, Butte, Peninsula of Lake Ibsen, Pleasant Lake, Turtle Mountains; Logan Co. (Brenckle).

1157. **Bidens acuta** (Wiegand) Britton, Man. 1001. (1901).

Bidens comosa acuta Wiegand.

Leeds, Towner.

1158. **Bidens frondosa** Linn. Sp. Pl. 832. (1753).

Pleasant Lake; Logan Co.: Beaver Lake (Brenckle).

1159. **Bidens vulgata** Greene, Pittonia 4: 72. (1901).

Leeds, Peninsula of Lake Ibsen.

1160. **Bidens vulgata** var. **puberula** (Wiegand) Greene.

In a swamp, Leeds.

1161. **Bidens vulgata** var. **schizantha** Lunell, var. nov.

Leaves bipinnately 3-7 divided, except the 3 upper leaflets, which are undivided; petioles widened at base.

In the western part of the state.

MADIA Molina Chil.; Cav. Ic. III: 50, t. 298 (1794).

1162. **Madia glomerata** Hook. Fl. Bor. Am. 2: 24. (1834).

Leeds (extinct); Williams Co.: Spring Brook (O. A. Stevens).

GALINSOGA R. & P. Prodr. Fl. Per. 110, pl. 24. (1794).

1163. **Galinsoga parviflora** Cav. Icon. 3: 41, pl. 281. (1794).

Fargo (Cl. Waldron).

HYMENOPAPPUS L'Her. Diss. (1788).

1164. **Hymenopappus filifolius** Hook. Fl. Bor. Am. I: 317. (1833).

Morton County (W. B. Bell).

BAHIA Lag. Gen. & Sp. Nov. 30. (1816).

1165. **Bahia oppositifolia** Nutt.; T. & G. Fl. N. A. 2: 376. (1842).

Trichophyllum oppositifolium Nutt. Gen. Pl. 2: 167. (1818).

Picradeniopsis oppositifolia (Nutt.) Rydb. Britt. Man. 1008. (1901).

"On denudated sterile hills, near Fort Mandan;" Morton Co. (W. B. Bell).

TETRANEURIS Greene, Pittonia III: 265. (1898).

1166. **Tetraneuris simplex** A. Nels. Bot. Gaz. 127. (1899).

Belfield (Bergman).

HYMENOXYS Cass. Dict. Sc. Nat. LV.: 278. (1828).

1167. **Hymenoxys pumila** (Greene).

Picradenia pumila Greene, Pittonia III: 271. (1898).

Belfield (Bergman).

1168. **Hymenoxys Richardsonii** (Hook.) Ckll. Bull. Torr. Bot. Club. 31: 471. (1904).

Dickinson (Cl. Waldron).

HELENIASTRUM Vaillant. Act. 406. (1720).

Inula Virgilius, Plinius, etc. *Helenium* Dodonaeus Pempt. 344. (1583), Morison, Vaillant, Boerhave, Bauhin, was used for what Caesalpinus calls *Enula*=*Inula Helenium* Linn., which no doubt is=*Helenium vulgare* Dod. This eliminates *Helenium* as a synonym and validates *Heleniastrum*, as not built on a pre-existing genus name.

1169. **Heleniastrum montanum** (Nutt.)Nwd & Lll..

Helenium montanum Nutt. Trans. Am. Phil. Soc. n. ser. 7: 384. (1841).

Leeds.

GAILLARDIA Foug. Mem. Acad. Sci. Paris 1786: 5. (1786).

1170. **Gaillardia aristata** Pursh, Fl. Am. Sept. 573. (1814).

Leeds, Butte; Kulm (Brenckle).

1171. **Gaillardia aristata** var. **foliacea** Lunell in Am. Midl. Nat. Vol. II: 122. (1911.)

Leeds, Butte.

BOEBERA Willd. Spec Pl. III: 2125. (1803).

Dysodia Cav. Ann. Cient. Nat. 6: 334. (1801–2).

1172. **Boebera papposa** Rydb. in Britt. Man. 1012. (1901).

Tagetes papposa Vent. Pl. Jard. Cels. 36, pl. 36. (1800).

Dysodia chrysanthemoides Lag. Gen. & Sp. Nov. 29. (1816).

Dysodia papposa Hitch. Trans. Acad. St. Louis 5: 503. (1891).

Morton County. (W. B. Bell); Fort Lincoln near Bismarck (Brenckle).

ACHILLAEA Diosc. 4: 36 (Αχιλλειος).

1173. **Achillaea Ptarmica** Linn. Sp. Pl. 898. (1753).

In an old garden. Leeds.

1174. **Achillaea lanulosa** Nutt. Journ. Acad. Phila. 7: 36. (1834).

Leeds, Butte, Devils Lake, Pingree, Bottineau.

1175. **Achillaea lanulosa** var. **arachnoidea** Lunell in Am. Mid. Nat. Vol. I: 235. (1910).

St. John, Peninsula of Lake Ibsen.

1176. **Achillaea multiflora** Hook. in Am. Mid. Nat. Vol. II: 296. (1912).

St. John.

ORMENIS Cass. Dict. Sc. Nat. XXIX.: 180. (1823). Ανϑεμιον Theophr. 7. 9. *Leucanthemum* Plin. 22, 21.

1177. **Ormenis Cotula** Hippocrates? Herbariorum. Diosc. 3: 154.

Leeds, Pleasant Lake, St. John.

PONTIA Bubani, Fl. Pyr. II: 218. (1890).

Chrysanthemum (χρυδανϑεμον) Diosc. 4. 58, for which Daubeny accredits *Chr. coronarium* as the type, now that certain other *Chrysanthema* were called by Diosc. and others *Buphthalmum*, etc., would not militate against the fact that Chr. is the name of the genus, since that is what Diosc. called the type plant As it is considered desirable here to segregate the *Leucanthemum* group, this latter name is not available, because it was applied by Plinius to *Anthemis thia.*—*Pontia* Bubani l. c. = *Leucanthemum* Tournef., not Plinius 22. 21

1178. **Pontia vulgaris** (Brunfels) Bubani. l. c. 221.

Chrysanthemum Leucanthemum Linn. Sp. Pl. 888. (1753).

Belfield (O. A. Stevens).

SANTOLINA "Anguillara (vix, quum eam tantummodo nominaverit." *Bubani*). Dod. Hist. Stirp. Pempt. II., Bk. III., ch. 27. (1583). Tourn. Inst. 460. (1700).

1179. **Santolina suaveolens** Pursh, Fl. Am. Sept. 520. (1814).

Matricaria discoidea DC. Prodr. 6: 50. (1837).

Matricaria matricarioides (Less.) Porter, Mem. Torr. Bot. Club 5: 341. (1894).

Leeds, Minnewaukan.

CHAMAEMELUM Hippocrates, Morb. Mul. I.: 625. Ανϑεμις Diosc. 3: 154. Ανϑεμον Theophr. 7, hist. 13, dicitur Χαμαιμελον. *Anthemis* Plin. 22. 21.

Matricaria Vaillant; the *Chamomilla* of Linn. is Chamille to-day. Theophr. had no Chamille. Officinis *Chamomilla* is *Anthemis* of Diosc. (Ruell. de Diosc. bk. III., p. 292—1547).

1180. **Chamaemelum vulgare** Hippocr. l. c.; Theophr. Hist. Pl. 1: 7, c. 8. Diosc., 1: 3, c. 145; Dod. Pempt. 257.

Matricaria Chamomilla Linn. Sp. Pl. 891. (1753).

Kulm (Brenckle).

TANACETUM Brunfels, Herb. Viv. Ic. 250—251. (1531), also Lob. Cusa, Dod. Matth. Ges. Lon. Caes.

1181. **Tanacetum vulgare** Trag. Stirp. 158. (1552), also Eyst.; Grisl.; Linn. Sp. Pl. 1184. (1753).

Turtle Mountains.

1182. **Tanacetum vulgare crispum** DC. Prodr. 6: 128. (1837).

Towner.

ARTEMISIA Dioscorides 3: 127; Tourn. Inst. 460. (1700); Bauh. Pin. 137. (1620); Fuchs. Stirp. 25. (1549); Dodon. Hist. Stirp. Pemp. 1. 2. 12. (1583).

1183 **Artemisia Forwoodii** S. Wats. Proc. Am. Acad. 25: 133. (1890).

Stem leaves green, glabrate. Pleasant Lake, Devils Lake; Kulm and Emmons County (Brenckle).

1184. **Artemisia Forwoodii** var. **calvens** Lunell.

Artemisia caudata var. *calvens* Lunell in Am. Midl. Nat. Vol. II: 188. (1912). Stem leaves woolly canescent.

Willow City, Leeds, Butte; Antler (Bergman).

1185. **Artemisia dracunculoides** Pursh, Fl. Am. Sept. 742. (1814).

Pleasant Lake, St. John; Morton Co.

1186. **Artemisia glauca** Pall.; Willd. Sp. Pl. 3: 1831. (1804).

Pingree, Bottineau, Brinsmade, Peninsula of Lake Ibsen.

1187. **Artemisia frigida** Willd. Sp. Pl. 3: 1838. (1804).

Leeds.

1188. **Artemisia Absinthium** Theophr. Diosc. Plin.; Linn. Sp. Pl. 848. (1753).

Leeds, Turtle Mountains.

1189. **Artemisia Abrotanum** Linn. Sp. Pl. 845. (1753).

Leeds; La Moure County (Brenckle).

1190. **Artemisia biennis** Willd. Phytogr. 11. (1794).

Leeds.

1191. **Artemisia longifolia** Nutt. Gen. 2: 142. (1818).

Leeds.

1192. **Artemisia gnaphaloides** Nutt. Gen. II: 143. (1818).

Emmons Co.: Fenwick (Brenckle).

1193. **Artemisia rhizomata** A. Nels. Bull. Torr. Bot. Club. 27: 34. (1900).

Leeds.

1194. **Artemisia cana** Pursh, Fl. Am. Sept. 2: 521. (1814).

Sentinel Butte (Brenckle).

1195. **Artemisia tridentata** Nutt. Trans. Am. Phil. Soc. (II.) 7: 398. (1841).

Medora (Bergman).

PETASITES Diosc. 4: 108 (πεταϐιϑης); Bauh. Pin. 197. (1620); Fuchs, Hist. Stirp. 370. (1549); Tourn. Inst. 451. (1700).

1196. **Petasites sagittata** (Pursh) A. Gray in Brew. & Wats. Cal. Bot. I: 407. (1876).

Tussilago sagittata Pursh, Fl. Am. Sept. 332. (1814).

Nardosmia sagittata Hook. Fl. Bor. Am. I: 307. (1833).

Turtle Mountains, Pleasant Lake.

ARNICA Fehr. Rupp. Jen. 141. (1726). Linn. did not consider it, called it *Doronicum.*

1197. **Arnica fulgens** Pursh, Fl. Am. Sept. 2: 527. (1814).

Dunsieth; Dickinson (Cl. Waldron).

SENECIO Plin. Hist. 468: 10; Matth. Comm. 495. (1554); Less.; Tour. Inst. 456. (1700); Linn. Gen. 251. (1737) = *Erigeron* of the Greeks.

1198. **Senecio integerrimus** Nutt. Gen. 2: 165. (1818).

Butte, Peninsula of Lake Ibsen.

1199. **Senecio perplexus** A. Nels. Bull. Torr. Bot. Club 27: 271. (1900).

Minot, Dunsieth, Leeds; Dickinson (Cl. Waldron).

1200. **Senecio perplexus dispar** A. Nels. Man. Rocky Mts. Fl. 580. (1909).

Senecio dispar A. Nels. l. c. 272. (1900).

Dunsieth.

[1201. This number has been used for **Cheirinia elata**, next after 518, Vol. IV. 411. (1916).]

1202. **Senecio columbianus** Greene, Pittonia III: 170. (1897).

Senecio atriapiculatus Rydb. Mem. N. Y. Bot. Gard. I: 442. (1900).

Butte; Valley City (O. A. Stevens).

1203. **Senecio Purshianus** var. **viridescens** Lunell in Am. Mid. Nat. Vol. I: 207. (1910).

Leeds, Butte, Dunsieth, Minot (the last probably distinct).

1204. **Senecio Plattensis** Nutt. Gen. 2: 165. (1818).

Leeds, Butte, Thorpe, Towner.

1205. **Senecio manitobensis** Greenman, in the Ottawa Naturalist, Vol. 25.: 117. (1911).

"McHenry Co.: Sand Hills, July 13, 1911, J. Lunell, no 24. (hb. Gray.)"

1206. **Senecio pseudaureus** Rydb. Bull. Torr. Bot. Club 24: 298. (1897).

Leeds, Butte, Minnewaukan.

1207. **Senecio suavis** Lunell in Am. Mid. Nat. Vol. II: 125. (1911). Very closely related to **S. densus** Greene, Pittonia IV: 226. (1900), but Dr. Greene said, when he saw the type in my herbarium, that this was a species unknown to him. Pleasant Lake.

1208. **Senecio palustris** (Linn.) Hook. Fl. Bor. Am. I: 334. (1833).

Cineraria palustris Linn. Sp. Pl. ed. 2: 243. (1763).

Leeds, Peninsula of Lake Ibsen, Rolette.

1209. **Senecio McDougalii** Heller, Bull. Torr. Bot. Club 26: 592. (1899).

Pleasant Lake, Dunsieth, Turtle Mountains.

ARCION (ἄρκειον) Diosc. 4. 107, Plin. 25. 9. *Personata* 21. 27. Απαρινη Theophr. n. pl. 7. 14. *Lappa* Tourn. 256. (1700). *Arctium Lappa* Linn. 243. (1737). *Lappa* was among the Romans the general name for plants some part of which was adherent.

1210. **Arcion minus** (Fuchsius) Bubani ex Schk. Handb. 3: 4317. (1803); Tourn. 450. (1700).

Lappa minor DC. Fl. Fran. 4: 77. (1803).

Leeds, Devils Lake, Pleasant Lake; Kulm (Brenckle).

CIRSIUM (Κιρϐιον) Dioscorides 4: 119; Tourn. 447. (1700). *Carduus* Linn. Gen. 244. (1737).

1211. **Cirsium lanceolatum** (Linn.) Scop. Fl. Carn. ed. 2, 2: 130. (1772).

Carduus lanceolatus Linn. Sp. Pl. 82. (1753).

Kulm (Brenckle).

1212. **Cirsium nebraskense** (Britton) Lunell in Am. Mid. Nat. Vol. II: 301 (1912).

Carduus nebraskensis Britton, Ill. Fl. III: 487. (1898).

To include var. *discissum* Lunell, in A. Midl. Nat. l. c.

[Not *Carduus Flodmannii* Rydb. Fl. of Montana. 451 (1900). which has a different pappus].

Leeds, Butte, Pleasant Lake, Devils Lake, Turtle Mountains.

1213. **Cirsium nebraskense** var. **formidolosum** Lunell, in Am. Mid. Nat. Vol. III: 143. (1913).

Minot.

1214. **Cirsium megacephalum** (A. Gray) Cockerell, Univ. Mo. Stud. Sci. 2^2: 254. (1911).

Cnicus undulatus megacephalus A. Gray, Proc. Am. Acad. 10: 24. (1874).

Carduus megacephalus Smyth, Trans. Kans. Acad. 16: 160. (1899).

Pleasant Lake, Steele.

1215. **Cirsium muticum** Michx. Fl. Bor. Am. II: 89. (1803). Turtle Mountains.

1216. **Cirsium arvense** var. **horridum** Wimmer & Grabowski, Fl. Silesiaca II: 92. (1828).

Leeds, and everywhere.

1217. 1218. *Epithymum indecorum* and *E. Gronovii* to be found next after No. 844, *E. Coryli*, in Vol. IV: 511. (1916).

LEUCACANTHA (Λευκακάνϑη) Diosc. 3. 19. Πανταδουϐα Theophr. h. p. 6. 5. Κυανος, a floris cyaneo colore, Plin. 21: 8, 11. *Centaurea* 263. (1737).

1219. **Leucacantha imperialis** (Hauskn.) Nwd. & Lll.

Centaurea imperialis Hauskn. ex. Bornm. Beitr. Bot. Centralbl. XX. II. 68. (1906).

Occasional escape from gardens. Leeds.

1220. *Agalinis aspera* to be found next after No. 927, in Vol. V. 7: (1917).

1221. *Monotropa uniflora* to be found next after no. 793, in Vol IV: 503. (1916).

1222. **Leucacantha Cyanus** (Linn.) Nwd. & Lll.

Centaurea Cyanus Linn Sp. Pl. 911. (1753).

Fargo (Cl. Waldron).

PLANTS OF MANHATTAN AND BLUE RAPIDS, KANSAS, WITH DATES OF FLOWERING.—I.

BY O. A. STEVENS.

Under this title it is intended to bring together the writer's observations made chiefly during the years 1904 to 1909 inclusive. The list is fairly complete, comprising about 600 species, specimens of practically all of which were collected and are now deposited with the Blue Rapids High School. The dates of flowering refer only to the beginning of the flowering period and are the results of a practise of recording each season the first flowers seen, together with a note on the approximate time which it was believed the species had been in flower. Many of these records are of common plants under constant observation and quite accurate. Others are doubtless subject to correction.

In recording the time of flowering it has seemed advisable to divide the month into periods of five days each, using the days 5, 10, etc.; also giving the exact average date where the dates